WHAT IS CLAIMED IS:

1. A passive optical network transmission system comprising:

a plurality of subscriber unit including optical network unit processing portions for terminating an optical communication network;

a station unit including optical line terminal processing portion terminating said optical communication network;

means for monitoring increasing and decreasing of idle cells;

means for recognizing accumulation of cell in said optical network unit processing portion depending upon the result of monitoring; and

means for individually handling band process in said optical communication network according to necessary or unnecessary of band restriction depending upon traffic type.

2. A passive optical network transmission system as set forth in claim 1, which further comprises means for rejecting packet which cannot be processed.

3. A passive optical network transmission system as set forth in claim 1, wherein said optical line terminal processing portion includes grant generating means for non-band restricted cell for generating transmission permission for the non-band restricted cell by assigning extra band constantly, and idle

cell detecting means for monitoring increasing and decreasing said idle cell.

4. A passive optical network transmission system as set forth in claim 3, wherein said optical line terminal processing portion further includes means for discriminating said transmission permission for permitting individual process of traffic requiring band restriction and traffic not requiring band restriction.

5. A passive optical network transmission system as set forth in claim 4, wherein said optical line terminal processing portion further includes means for setting weighting function for estimating variation of said traffic.

6. A passive optical network transmission system as set forth in claim 1, wherein said optical line terminal includes means for notifying said subscriber unit stopping transmission for packet information.

7. A dynamic band assignment method in a passive optical network transmission system including a plurality of subscriber unit including optical network unit processing portions for terminating an optical communication network and a station unit including optical line terminal processing portion terminating

said optical communication network, comprising the steps of

monitoring increasing and decreasing of idle cells;

recognizing accumulation of cell in said optical network unit processing portion depending upon the result of monitoring; and

individually handling band process in said optical communication network according to necessary or unnecessary of band restriction depending upon traffic type.

8. A dynamic band assignment method as set forth in claim 7, which further comprises a step of rejecting packet which cannot be processed.

9. A dynamic band assignment method as set forth in claim 8, wherein said optical line terminal processing portion performs process comprising the steps of generating transmission permission for the non-band restricted cell by assigning extra band constantly, and monitoring increasing and decreasing said idle cell.

10. A dynamic band assignment method as set forth in claim 9, wherein said optical line terminal processing portion performs process comprising the step of discriminating said transmission permission for permitting individual process of traffic requiring band restriction and traffic not requiring

band restriction.

11. A dynamic band assignment method as set forth in claim 10, wherein said optical line terminal processing portion performs process comprising the step of setting weighting function for estimating variation of said traffic.

12. A dynamic band assignment method as set forth in claim 7, wherein said optical line terminal processing portion performs process comprising the steps of notifying said subscriber unit stopping transmission for packet information.